

AVAILABILITY AND QUALITY OF PUBLIC HEALTH
FACILITIES IN EASTERN INDONESIA:
RESULTS FROM THE INDONESIA FAMILY LIFE
SURVEY EAST 2012

JAN PRIEBE, FIONA HOWELL, AND MARIA CARMELA LO BUE

TNP2K WORKING PAPER 11c - 2014
June 2014

TNP2K
WORKING PAPER

AVAILABILITY AND QUALITY OF PUBLIC HEALTH FACILITIES IN EASTERN INDONESIA: RESULTS FROM THE INDONESIA FAMILY LIFE SURVEY EAST 2012

JAN PRIEBE, FIONA HOWELL, AND MARIA CARMELA LO BUE

TNP2K WORKING PAPER 11c - 2014

June 2014

The TNP2K Working Paper Series disseminates the findings of work in progress to encourage discussion and exchange of ideas on poverty, social protection, and development issues. Support for this publication has been provided by the Australian Government through the Poverty Reduction Support Facility (PRSF).

The findings, interpretations, and conclusions herein are those of the author(s) and do not necessarily reflect the views of the Government of Indonesia or the Government of Australia.

You are free to copy, distribute, and transmit this work for noncommercial purposes.

Attribution: Priebe, J., F. Howell, and M. Lo Bue. 2014. 'Availability and Quality of Public Health Facilities in Eastern Indonesia: Results from the Indonesia Family Life Survey East 2012', TNP2K Working Paper 11c-2014. Jakarta, Indonesia: Tim Nasional Percepatan Penanggulangan Kemiskinan (TNP2K).

To request copies of the report or for more information on the report, please contact the TNP2K Knowledge Management Unit (kmu@tnp2k.go.id). The paper is also available at the TNP2K website (www.tnp2k.go.id).

TNP2K
Grand Kebon Sirih Lt.4,
Jl.Kebon Sirih Raya No.35,
Jakarta Pusat, 10110
Tel: +62 (0) 21 3912812
Fax: +62 (0) 21 3912513
www.tnp2k.go.id

Availability and Quality of Public Health Facilities in Eastern Indonesia: Results from the Indonesia Family Life Survey East 2012

Jan Priebe, Fiona Howell, and Maria Carmela Lo Bue¹

June 2014

ABSTRACT

Little is known about public health-care supply in Eastern Indonesia, a region that shows worse health outcomes than the rest of the country. Drawing on a new dataset (IFLS East 2012), this paper examines the availability and quality of public health-care facilities (*puskesmas* and *posyandu*) in Eastern Indonesia.

Our findings suggest that public health-care supply plays a larger and more important role in Eastern Indonesia compared with Western Indonesia. However, this stronger reliance and dependence on public health-care provision has not necessarily resulted in quality health-care supply. Although significant improvements have been achieved over time, we found that many *puskesmas* and *posyandu* could benefit from more and better-trained staff (education, training, availability, absenteeism) and better physical endowment (infrastructure, medical equipment, and medications). The results further suggest that remarkable differences in the provision of health care exist between urban and rural areas; urban areas have on average better-equipped *puskesmas*, whereas rural areas seem to have better-equipped *posyandu*. Furthermore, we found that direct funds from the central level (central government funds and Jamkesmas), despite the decentralization process, play a major role in financing the operations of public health facilities. In rural Eastern Indonesia, these central-level funds constitute about 80 percent of the total operational budget of a *puskesmas*.

¹ Jan Priebe (jan.priebe@tnp2k.go.id or jpriebe@uni-goettingen.de) is a senior economist at TNP2K's Cluster 1 team. Fiona Howell is the social assistance policy advisor in TNP2K, Government of Indonesia. Maria Carmela Lo Bue is research associate at the Development Economics Research Group at the University of Göttingen, Germany.

The authors would like to thank Suahasil Nazara, Elan Satriawan, and Sudarno Sumarto for valuable input and comments. Special thanks go to SurveyMETER, in particular, to Bondan Sikoki, Ni Wayan Suriastini, and Firman Witoelar for providing clarifications on the IFLS East 2012 data. We also wish to gratefully acknowledge Maciej Czos and Pamela S. Cubberly for their editorial assistance. Any remaining errors are solely our responsibility.

Table of Contents

1. Introduction	1
2. Health-Care Supply and Use in Eastern Indonesia: An Overview	4
3. Key Findings on Quantity and Quality of Health Facilities across Urban and Rural Areas in Eastern Indonesia	6
General Health-Care Provision.....	6
Maternal and Child Health-Care Provision	12
4. Do Poorer Areas Have Lower Levels of Health-Care Provision?.....	17
5. Financial Resources of the <i>Puskesmas</i>	19
5. Conclusion	20
References.....	22
Appendices.....	24
Appendix A.....	24
Appendix B.....	25

List of Tables

Table 1:	Inpatient and Outpatient Treatment in Indonesia	5
Table 2:	Number of Health Facilities by Urban-Rural Areas	6
Table 3:	Characteristics of the Heads of <i>Puskesmas</i>	7
Table 4:	Care Provision in <i>Puskesmas</i> by Practitioner Type and Urban-Rural Areas.....	8
Table 5:	Practitioners' Characteristics and Working Hours in <i>Puskesmas</i> by Urban-Rural Areas	9
Table 6:	Average Number of Government and Honoraria Employees per <i>Puskesmas</i> by Urban-Rural Location and by Working Time	10
Table 7:	Room Conditions in <i>Puskesmas</i> by Urban-Rural Areas	11
Table 8:	Availability and Condition of Health Instruments in <i>Puskesmas</i> by Urban-Rural Areas	11
Table 9:	Services Offered in <i>Posyandu</i> by Urban and Rural Location	12
Table 10:	Availability of Health Instruments at the <i>Posyandu</i> by Urban and Rural Areas	13
Table 11:	Level of Capacity in <i>Posyandu</i> by Urban and Rural Areas	14
Table 12:	Educational Level of <i>Posyandu</i> Heads and Cadres by Urban and Rural Areas	14
Table 13:	Main Problems Faced by <i>Posyandu</i>	15
Table 14:	Traditional Midwives: Services Offered by Urban-Rural Areas	16
Table 15:	Community Characteristics by Community Wealth Levels	18
Table 16:	Financial Resources of <i>Puskesmas</i> by Urban-Rural Areas	19
Table A1	Absenteeism in the <i>Puskesmas</i> by Urban-Rural Areas	24
Table A2	Training of the Traditional Midwives by Urban-Rural Areas	24
Table B1	Care Provision in <i>Puskesmas</i> by Type of Practitioner and by Community Wealth Levels	25
Table B2	Practitioners' Characteristics and Working Hours in <i>Puskesmas</i> by Community Wealth Levels	26
Table B3	Absenteeism in <i>Puskesmas</i> by Community Wealth Levels	27
Table B4	Average Numbers of Government and Honoraria Employees in <i>Puskesmas</i> by Working Time and by Community Wealth Levels	28
Table B5	Room Conditions in <i>Puskesmas</i> by Community Wealth Levels	29
Table B6	Availability and Condition of Health Instruments in <i>Puskesmas</i> by Community Wealth Levels	29
Table B7	Services Offered in <i>Posyandu</i> by Community Wealth Levels	30
Table B8	Availability and Condition of Instruments at the <i>Posyandu</i> by Community Wealth Levels	31
Table B9	Educational Level of <i>Posyandu</i> Heads and Cadres by Community Wealth Levels.....	31
Table B10	Classification of <i>Posyandu</i> by Community Wealth Levels	32
Table B11	Problems Faced by <i>Posyandu</i> by Community Wealth Levels	32

1. Introduction

In the past several decades, Indonesia has achieved significant improvements in the delivery of health-care services. Starting in the mid-1970s, the country embarked on a massive expansion of basic health services and launched a large-scale health-care supply programme (Inpres), which rapidly led to an increase in the number of health centres and physicians. A further expansion in the supply of health practitioners occurred in 1992 when Indonesia embarked on the ambitious *Bidan Di Desa* programme, which trained 50,000 village midwives and posted them to rural villages throughout the country. With the start of the decentralization process in the late 1990s and early 2000s, a significant change in the financing and administration of health services occurred: a change towards more local accountability, devolution, and privatization. As a result, increasing the provision of health-care services became one of the key responsibilities of local governments (Kristiansen and Santoso 2006); funds were allocated for the construction of additional health centres (*puskesmas*) and for expansion of community access to services through auxiliary mobile health centres (*pustu*). However, the expansion in the supply of public health services in the past several decades shows striking disparities across and within provinces, between urban and rural areas, as well as between poor and rich communities.

Although the supply of health services in Indonesia has increased over time, the demand for them has also risen substantially. Several factors can be linked with the increases in health-care demand in the past several decades (higher economic growth rates, lower poverty rates, better infrastructure, higher life expectancy, and population growth). Although most of these factors led to a continuous rise in health-care demand, the introduction of free health insurance schemes for the poor initiated in the early 2000s (Pradhan et al. 2007; Sparrow et al. 2010) boosted the demand for health services.

Given the challenges mentioned above and despite many improvements, Indonesia still lacks the adequate provision of public health-care services, in particular in rural areas and in the eastern part of the archipelago. This undersupply is reflected in Indonesia's mixed performance on health outcomes in the past several decades; although the country has achieved remarkable progress in reducing child mortality rates and increasing life expectancy, maternal mortality rates decreased only slightly, with child under-nutrition rates stagnating with progress often being confined to more developed areas and provinces (Yavuz and Rokx 2008; MoH 2014). Likewise, new challenges have emerged. Due to the changes in consumption patterns associated with the nutrition transition, an increasing number of people are becoming overweight and obese (Roemling and Qaim 2012, 2013). Whereas one-third of children under five years of age are stunted, and more than 20 percent of Indonesian women are overweight (World Bank 2013). This double burden of malnutrition poses a significant risk to Indonesia's development, as it strongly compromises the health of the current and future workforce and, by directly causing additional health costs and significant losses in productivity, undermines the growth trajectories and the poverty reduction perspectives of the country.

The undersupply of health services in Indonesia manifests itself, not only in the mixed performance of health outcomes in the past several decades, but also in the price of medical care. According to Kristiansen and Santoso (2006), the privatization of health-care services in the early 2000s led to an increase in the real costs of medicines and professional therapy, causing poor families to return to traditional medicine and healers.

The undersupply of health services has been noted by the Government of Indonesia. The National Development Planning Agency (Badan Perencanaan Pembangunan Nasional or Bappenas) recognised that higher public expenditure in the health sector has so far not been sufficient to substantially improve the Indonesian health-care system nor to fully achieve the country's commitment to the Millennium Development Goals (MDGs) in health¹ (Bappenas 2009). Likewise, Yavuz and Rokx (2008) found that, although some improvements have been made in increasing the supply of health services, very little progress has been recorded in spending efficiency, quality of services, and ensuring universal coverage of the health system.

This paper focuses on the availability and quality of health-care supply by public providers in Eastern Indonesia. Eastern Indonesian provinces have often been ranked relatively low compared with other provinces in several health and non-health-related dimensions (Yavuz and Rokx 2008; Rokx et al. 2010). For example, infant and child mortality rates in provinces such as East and West Nusa Tenggara, Maluku, and North Maluku were almost 50 percent higher than in Bali or Java (BPS 2008); life expectancy in East Nusa Tenggara, North Maluku, and Papua lie well below the national average, and rates of access to clean water and sanitation in provinces such as Maluku and Papua are about 40–50 percent, whereas in many Western Indonesian provinces they are 50–60 percent (Yavuz and Rokx 2008). It is therefore of high importance and policy relevance to better understand the provision, problems, and constraints that health-care facilities in Eastern Indonesia face.

Information on health-care supply in Indonesia is still very scarce. Although many data sets allow for the analysis of nationwide health outcomes and health-care use behaviour (Susenas, Riskesdas, and Demographic and Health Survey data), only Village Potential Statistics (Potensi Desa or PODES) data provide a limited amount of information on the availability of health facilities. Using data from the first round of the Indonesian Family Life Survey for Eastern Indonesia (IFLS East 2012), we were able to provide a new look at and insights into provision and health-care use in Eastern Indonesia. Conducted by SurveyMETER on behalf of TNP2K in seven provinces of Eastern Indonesia (Kalimantan Timur, Maluku, Maluku Utara, Nusa Tenggara Timur, Papua, Papua Barat, and Sulawesi Tenggara), the IFLS East 2012 contains detailed data at the individual, household, and community levels. A total of 98 villages were surveyed (Satriawan et al. 2014; Priebe et al. 2014). In particular, the IFLS East 2012 provides information on several types of health institutions, such as government health centres (*puskesmas/pustu*), traditional midwives, and child health posts (*posyandu*), all of which are examined in this working paper.

Our results suggest that significant scope exists for the improvement of public health-care facilities in Eastern Indonesia in terms of the availability and quality of medical staff as well as physical infrastructure and equipment. In particular, *puskesmas* in rural areas seem to operate under many constraints and limitations that are likely to restrict their ability to provide sufficient basic health services without considering quality. However, we did not find that public health services in general are delivered with lower quality in rural areas. At the *posyandu* level, we observed the opposite: rural *posyandu* were better endowed compared to urban *posyandu*. Data from the IFLS East 2012 further show that financial resources from the national level (national government funds and Jamkesmas) constitute the major

¹ These health goals are to (a) eradicate hunger by reducing by half the proportion of malnourished people (MDG 1), (b) reduce child mortality by reducing by two-thirds the mortality of children under five (MDG 4), and (c) improve maternal health by reducing maternal mortality by three-quarters and achieving universal access to reproductive health (MDG 5).

source of finance for *puskesmas*. About 40 percent of the general budget for urban—and 80 percent for rural—*puskesmas* can be attributed to such funds.

The remainder of this paper is organised as follows: Section II provides an overview of the demand and supply of health care in Eastern Indonesia compared with Western Indonesia. Section III illustrates several quantitative and qualitative indicators of different types of health institutions (*puskesmas*, *posyandu*, and traditional midwives) in an urban-rural comparison. Section IV re-analyses section 3 from a wealth gradient perspective (poor areas versus rich areas), and section V discusses the financing structure of the *puskesmas*. Section VI provides concluding remarks.

2. Health-Care Supply and Use in Eastern Indonesia: An Overview

In Indonesia, several levels of government (national, provincial, district, subdistrict, and village) are involved in the planning and supply of health facilities: the national level designs the overall framework of Indonesia's health policy and is responsible for allocating financial resources (budget) to Indonesia's health sector. The central government is also in charge of the national health insurance plans and setting the regulatory framework (identification of accreditation standards for health facilities and medical workers). However, most managerial and financial responsibilities and the actual provision of health care are decentralised to the provincial, district, subdistrict, and village levels.

At the district level, the Health Office (*Dinas Kesehatan Kabupaten/Kota* or *Dinas Kesehatan* for short), which is linked to the Ministry of Health, implements provincial guidelines and directly administers local public health programmes such as immunization and infectious disease control. At the subdistrict level, the community health centres (*puskesmas*) are tasked with directly administering medical care to patients. At the village level,² provision of care includes small community health centres, pustu, mid-wife clinics, and child health posts (*posyandu*), as well as public hospitals.

The supply of health care in Indonesia is thus managed by several different types of health-care providers. On the public side, in addition to public hospitals, there are public subdistrict-level community health centres (*puskesmas*), which offer general health-care services, and government-funded village-level health centres (such as *posyandu*), which arrange for midwives (*bidan*) and village midwives (*bidan desa*)³ services once a month per village. In addition, private health-care providers contribute to the overall provision of health services in the country. Private providers can be grouped into traditional providers (healers and midwives) and modern providers, such as private physicians and privately run clinics and hospitals.⁴

As shown in table 1, all over Indonesia, outpatient treatment is largely managed by polyclinics,⁵ *puskesmas*, and paramedics, whereas inpatient treatment is most commonly received at public hospitals, followed by private facilities.

In terms of differences between Western and Eastern Indonesia, one observes that patients in Eastern Indonesia in provinces such as Lombok, Maluku, Nusa Tenggara Barat, Nusa Tenggara Timur, and Papua appear to rely much more on *puskesmas* for outpatient treatment. Likewise, they are relatively more likely to rely on public health facilities for inpatient treatment. We observed therefore that, in general, public health services play a much larger role in Eastern than in Western Indonesia.

To what extent the relatively lower use of private health-care providers is due to supply constraints (e.g., qualified private doctors are less available in Eastern Indonesia) or a lower demand for such services cannot be established with existing data.

² The term village refers to both rural (*desa*) and urban (*kelurahan*) villages.

³ The main difference between a midwife and a village midwife is that, in addition to the maternal and child health-care services typically provided by midwives, village midwives are supposed to work more closely with the community; they promote community participation in health and serve as a health resource by actively seeking out patients at their homes (MoH 1994).

⁴ Many of the private physicians often accept various forms of health insurance, such as Jamkesda and Jamkesmas for the poor, Jamsostek for private employees, and Askes for government employees and civil servants.

⁵ Polyclinics are set up and run by private providers and often employ only a general practitioner and a dentist.

Table 1: Inpatient and Outpatient Treatment in Indonesia

PANEL A: Outpatient Treatment Conditional on Being Sick and Seeking Treatment (percent)							
	Java and Bali	Kalimantan	Maluku	NTT, NTB*, and Lombok	Papua	Sulawesi	Sumatra
State hospital	5	8	9	4	19	6	6
Private hospital	5	4	2	2	3	2	5
Doctor/polyclinic treatment	36	22	18	21	23	22	23
Health clinic (<i>puskesmas/pustu</i>)	28	40	55	56	60	50	29
Medical worker practice	33	31	17	19	4	23	41
Traditional treatment	3	2	2	2	1	2	3
Maternity healer	1	1	1	0	1	0	1
Other facilities and treatments	3	3	6	4	2	3	3

PANEL B: Inpatient Treatment Conditional on Being Sick and Seeking Treatment (percent)							
Indicator	Java and Bali	Kalimantan	Maluku	NTT, NTB*, and Lombok	Papua	Sulawesi	Sumatra
State hospital	40	58	64	40	77	63	46
Private hospital	39	29	13	14	14	17	35
Health clinic (<i>puskesmas/pustu</i>)	16	7	10	44	10	19	6
Medical worker practice	8	5	13	2	3	4	13
Traditional treatment	1	0	0	0	1	0	1
Other facilities and treatments	2	4	1	2	2	1	2

Source: Authors' calculations based on Susenas March 2013. Individual weights applied.

Note: NTT = Nusa Tenggara Timur; NTB = Nusa Tenggara Barat.

3. Key Findings on Quantity and Quality of Health Facilities across Urban and Rural Areas in Eastern Indonesia

This section illustrates several descriptive statistics on quantitative and qualitative aspects of different types of health facilities. Our analysis, which was designed around an urban-rural comparison, focused on two types of health-care supply: general and maternal/child.

This section first focuses on general health care, which is mainly provided by *puskesmas*, and then moves on to maternal and child care, which is the principal activity of *posyandu* and traditional midwives (dukun). Our analysis is based on a total of 268 health facilities: 97 *puskesmas*, 76 traditional midwives, and 95 *posyandu* (table 2).

Table 2: Number of Health Facilities by Urban-Rural Areas

	Urban	Rural	Total
Communities	39	60	98
Puskesmas	38	59	97
Traditional midwives	19	57	76
Posyandu	38	57	95
Total	95	173	268

Source: Authors' calculations based on IFLS East 2012.

General Health-Care Provision

Puskesmas provide most primary health services, including pre- and postnatal care, curative care, dentistry, and laboratory services.

In order to give insights into the quality of health care provided by *puskesmas*, table 3 presents descriptive characteristics of the heads of the *puskesmas*. In urban areas, 68.4 percent of *puskesmas* heads are medical doctors, whereas in rural areas, a significant majority of *puskesmas* heads do not possess this medical qualification⁶. In line with these findings, we observed that 47 percent of the heads of urban *puskesmas* completed a bachelor's degree (S1) and 26 percent completed a master's degree (S2) and/or PhD (S3) as their highest level of education. In contrast, in rural areas, one-fourth of *puskesmas* heads completed high school or a paramedic school and only 3.3 percent completed S2 or S3. These first results hint at the presence of important qualitative differences between urban and rural areas in the provision of public health care.

⁶ In Indonesia, one can obtain the title of 'medical doctor' even with an S1 bachelor degree in Indonesia. After receiving the S1, a person must do some practical training on the ground, and after at least one year, the person receives the title of medical doctor, which therefore can be obtained without an S2 or S3 degree.

Besides education levels and medical qualifications, our results suggest that heads of *puskesmas* in both urban and rural areas seem able to communicate with patients, as a large percentage of them speak the local language. However, in about one-third of cases in urban areas and about one-fourth of cases in rural areas, the heads of *puskesmas* rely on Bahasa Indonesia for communication.

Table 3: Characteristics of the Heads of Puskesmas

		Urban	Rural
Heads (number)		38	59
Profession of facility head (percent)	Medical doctor	68.42	15.25
	Not a medical doctor	31.58	84.75
Highest level of education completed (percent)	High school/paramedic school	0.00	25.42
	D1*/midwife	5.26	6.78
	D3*/Akper	13.16	32.20
	College/S1	47.37	15.25
	Public health	7.89	13.56
	S2/S3	26.32	3.39
	Other	0.00	3.39
University where education was completed for those who have completed D3, college, public health, S2/S3 (percent)	University of Gadjah Mada	7.89	0.00
	University of Airlangga	2.63	0.00
	University of Diponegoro	2.63	0.00
	Other state university	26.32	8.47
	Private university	10.53	13.56
	Other	50.00	77.97
Heads who can speak the local language (percent)		63.16	77.97

Source: Authors' calculations based on IFLS East 2012.

* D1 means medical diploma 1; D3 means medical diploma 3.

Table 4 presents descriptive statistics for several types of health practitioners working in the 38 *puskesmas* sampled in urban areas and 59 *puskesmas* sampled in rural areas.

Overall, the average number of years of experience is larger for the professional categories of nurses, midwives, village midwives, and paramedics than for other medical staff. Moreover, and in line with the results obtained on the heads of the *puskesmas*, *puskesmas* in rural areas perform relatively worse than in urban areas. For all types of medical professional categories, practitioners from rural *puskesmas* have on average fewer years of experience, and this gap appears to be larger for village midwives, nurses, general practitioners, and dentists.

Puskesmas in urban areas employ on average many more medical staff than *puskesmas* in rural areas, which is reflected in higher numbers of doctors, dentists, nurses, midwives, paramedics, and specialists, while *puskesmas* in rural areas seem to comprise a higher number of village midwives.⁷

Furthermore, table 4 depicts statistics on particular health services that each type of medical professional in a *puskesmas* performs. The data show that medical professionals in rural areas on average perform a wider range of different health services. For instance, a general practitioner in a rural area seems more likely to have worked on providing prenatal care and curative care for children, adults, and elderly compared to his/her urban counterpart. The interpretation of these findings is not straightforward. On the one hand, it is possible that rural *puskesmas* are relatively less available (low number of *puskesmas* per 1,000 people) or that they are simply understaffed (fewer medical professionals per 1,000 people) compared with urban *puskesmas*, and therefore need to deal with more patients. This might explain why medical staff in a rural *puskesmas* perform a larger variety of services. On the other hand, it may also imply that urban *puskesmas* have a larger pool of medical professionals and therefore allow their staff to specialise in certain services. In the latter case, the urban *puskesmas* do not necessarily deal with fewer patients per medical professional, but each medical professional is responsible for a narrower set of services.

Table 4: Care Provision in Puskesmas by Practitioner Type and Urban-Rural Areas

	Staff (number)		Experience (average number of years)		Provide Prenatal Care (percent)		Provide Curative Care for Children (percent)		Provide Curative Care for Adults (percent)		Provide Curative Care for Elderly (percent)	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
General practitioners	101	54	3.93	1.93	36.63	61.11	87.13	98.15	93.07	100.00	86.14	96.30
Dentists	41	22	5.09	2.50	0.00	0.00	82.93	90.91	85.37	90.91	80.49	86.36
Nurses	509	415	8.70	5.01	12.18	19.28	81.34	83.37	93.32	90.12	85.27	75.42
Midwives	244	198	7.99	5.14	91.80	94.95	72.54	63.13	50.41	67.68	33.20	64.14
Village midwives	40	102	9.06	3.81	100.00	100.00	80.00	95.10	72.50	74.51	70.00	50.98
Paramedics	43	38	7.76	7.07	9.30	26.32	62.79	65.79	44.19	57.89	41.86	50.00
Specialists	2	0	2.00		50.00	0.00	50.00	0.00	100.00	0.00	100.00	0.00

Source: Authors' calculations based on IFLS East 2012.

⁷ This finding aligns with Rokx, Giles, Satriawan, Marzoeki, Harimurti, and Yavuz (2010), who used PODES data from 2006; this finding may find its rationale in the Bidan di Desa programme, which started in 1992 and was designed to place midwives in rural areas on a three-year contract, with the possibility of a three-year extension. The programme has contributed to the increase in the number of village midwives and delivered some positive maternal and child health outcomes in rural areas (Frankenberg and Thomas 2001). It has also improved the employment conditions of midwives, as it guaranteed several benefits to them: they were permitted to have a private practice, they received a considerable bonus if they worked in very remote areas, and after a three-to-six year contract, they could easily find career opportunities either in the private sector or in the district health offices under the so-called regional pegawai tidak tetap contracts. These contracts were issued by the Ministry of Health to hire recent medical school graduates as physicians for a three-year period. After this period, these practitioners were given the option to continue their studies, go into the private sector, or become civil servants.

Table 5 complements table 4 by looking at the average working hours of medical professionals at *puskesmas*. We observed that all categories of health practitioners tend to spend a similar number of hours working and providing services, however in rural areas, medical professionals work slightly longer hours than their urban counterparts.

Absenteeism rates are significantly higher in rural areas (25.99 percent) compared with urban areas (10.27 percent). This points to the conclusion that rural areas do not necessarily face a shortage of medical professionals, but simply that a much larger share of their medical staff is often absent from the *puskesmas*, which leads to a higher workload for the remaining staff. To some degree, the higher absenteeism rate in rural areas is compensated for by the longer work hours of those medical professionals who are present in the *puskesmas*.⁸

Table 5: Practitioners' Characteristics and Working Hours in *Puskesmas* by Urban-Rural Areas

	Practitioners (number)		Hours Worked per Week (average number)		Hours Provide Services per Week (average number)		Medical Staff Absent in Past Week (percent)	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
General practitioners	101	54	31.06	32.2	23.23	23.51	14.61	42.86
Dentists	41	22	30.86	32.68	20.66	23.26	10.00	23.81
Nurses	509	415	32.21	32.17	24.13	21.83	10.14	22.76
Midwives	244	198	31.62	32.51	24.36	21.8	7.56	18.48
Village midwives	40	102	33.58	28.38	24.57	21.65	11.43	28.57
Paramedics	43	38	34.34	31.31	19.81	17.69	7.89	19.44
Specialists	2	0	36.00		24.00			

Source: Authors' calculations based on IFLS East 2012.

Several other factors are likely contributors to higher absenteeism rates among the medical professionals in rural *puskesmas*. As shown in table 6, medical professionals in urban *puskesmas* are more likely to be working under a government contract than on an honorarium basis. The share of medical professionals that work on an honorarium basis in rural *puskesmas* is relatively high, which seems to suggest that the demand for health-care services is higher than what can be satisfied by the government-contracted medical professionals alone. This relatively high demand, compared with the limited supply of government-contracted medical professionals, might have given medical professionals working under

⁸ Table A1 in the appendix shows the major reasons for absenteeism of medical professionals from *puskesmas*. It seems that in many cases (one-third of all cases in rural areas), medical staff no longer work for the *puskesmas* although they are still formally registered as *puskesmas* staff.

government contracts an advantageous bargaining position, in that they can demand more freedom in working—in addition to their obligations for the *puskesmas*—as private health professionals or simply having more days off.⁹

The ratio of health professionals under government contracts to those working on an honorarium basis may also point to funding problems for rural *puskesmas*, which despite the existing demand for health-care services, might not be able to hire more health professionals under government contracts.

Table 6: Average Number of Government and Honoraria Employees per Puskesmas by Urban-Rural Location and by Working Time

	Urban				Rural			
	Government Employees		Honoraria Employees		Government Employees		Honoraria Employees	
	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time
General practitioners	2.26	0.03			1.93	0.02		
Dentists	1.00	0.03			0.19	0.05		
Nurses	11.95	0.05	2.15	0.03	5.66	0.07	1.93	0.00
Midwives	5.74	0.03	0.94	0.00	2.34	0.02	1.02	0.00
Village midwives (bidan desa)	0.97	0.00	0.62	0.00	0.98	0.10	1.74	0.00
Paramedics	4.03	0.00	0.74	0.00	1.97	0.00	0.98	0.00
Obstetricians/gynaecologists	0.00	0.00			0.00	0.00		
Specialised in elderly	0.00	0.00			0.00	0.00		
Public health	1.76	0.00			0.90	0.00		
Paediatricians	0.00	0.00			0.00	0.00		
Assistant nutrition expert	0.74	0.00			0.39	0.00		
Health worker	1.29	0.03			0.49	0.00		
Administrative employees	2.53	0.00	1.35	0.00	0.58	0.02	0.74	0.02
Staff			0.21	0.00			0.05	0.00

Source: Authors' calculations based on IFLS East 2012.

The quality of health-care provision by *puskesmas* in rural areas is not only diminished by the high absenteeism rates of its medical professionals but also by the quality of the physical equipment itself. As has been documented in several studies, the quality of public health facilities in Indonesia has often been under scrutiny for its relatively poor level compared with other countries in Southeast Asia such as Malaysia, Philippines, Thailand, and Vietnam (Rokx et al. 2010). Table 7 shows descriptive statistics of the infrastructural conditions in *puskesmas*. On average, rural *puskesmas* have fewer problems related

⁹ Public sector doctors, nurses and midwives in Indonesia can also practice in the private sector. The policy of allowing public employees to work as private providers was intended to create an incentive for physicians and midwives to stay longer in their duty posts. However, dual practice of public physicians reportedly impacts public sector access, efficiency, and overall health system and out-of-pocket costs (WHO, 2013).

to the availability of administrative equipment and materials such as registration books and drawers to store files, whereas less than one-third of the urban *puskesmas* are in poor condition (i.e., dirty walls, ceilings, and floors, or water damage). However, 15–20 percent of *puskesmas* in rural areas have dirty examination rooms (dirty ceilings, walls, and floors) compared to only 2–5 percent of the *puskesmas* in urban areas with such conditions. Some *puskesmas* in rural areas also lack basic items, such as patient registration cards and books, whereas in urban areas there is no shortage of such items.

Table 7: Room Conditions in Puskesmas by Urban-Rural Areas

		Urban	Rural
<i>Puskesmas</i> (number)		38	59
Registration/waiting room (percent)	Patient registration cards	100	64.41
	Registration books	100	89.83
	Drawer to store files	97.37	79.66
	Dirty floor	14.29	18.18
	Dirty walls	10.81	15.22
	Dirty ceiling	10.81	15.22
	Experiencing leaks/splash/flood during the rainy season	15.79	32.20
Examination room (percent)	Dirty floor	2.63	15.25
	Dirty walls	2.63	15.25
	Dirty ceiling	5.26	20.34

Source: Authors' calculations based on IFLS East 2012.

Urban *puskesmas* not only have better physical infrastructure compared with rural *puskesmas* but also have, in absolute numbers, more and better equipment, which further deepens the difference in the quality of urban and rural *puskesmas* (table 8).

Table 8: Availability and Condition of Health Instruments in Puskesmas by Urban-Rural Areas

Health Instruments	Urban		Rural	
	Average number	In good repair (percent)	Average number	In good repair (percent)
Beds	3.76	98.67	2.46	97.97
Delivery kit	1.89	85.19	1.51	90.07
Electrocardiograms	0.39	46.15	0.10	80.00
Inpatient beds	2.61	85.82	2.14	86.92
Stethoscope	6.08	76.64	3.39	76.11
Syringes	3.08	93.18	2.69	88.10
Thermometer	3.18	92.77	2.66	87.97
Ultrasounds	2.95	98.98	1.42	100.00

Source: Authors' calculations based on IFLS East 2012.

Maternal and Child Health-Care Provision

Posyandu

Maternal and child health services are in many cases provided by *posyandu* throughout the country. Table 9 illustrates the type of services offered by *posyandu* in urban and rural areas. Overall, all *posyandu* weigh babies and a significant majority of them offer immunization services and provide supplementary food and vitamin A. However, on average, less than 50 percent of the *posyandu* offer family planning services.

Table 9: Services Offered in Posyandu by Urban and Rural Location

	Urban	Rural
<i>Posyandu</i> (number)	38	56
PANEL A: General services offered (percent)		
Weighing of babies/children	100.00	100.00
Provision of supplementary food	84.21	76.79
Provision of Oralit	39.47	62.50
Immunization Service	86.84	94.64
Pregnancy examination	47.37	75.00
Provision of iron vitamin	47.37	75.00
Provision of vitamin A	100.00	98.21
Treatment of patients	18.42	50.00
Child development	31.58	37.50
Mother and child health	34.21	62.50
PANEL B: Family planning services offered (percent)		
Oral contraceptive	50.00	42.86
Condom (per unit)	36.84	55.36
Injectable contraceptive	15.79	16.07
Counselling and help w/ treating pregnancy-related side effects	42.11	60.71
Family planning counselling	7.89	10.71

Source: Authors' calculations based on IFLS East 2012.

Contrary to what we found for *puskesmas*, the *posyandu* seem to provide more services and are better equipped in rural compared with urban areas. For instance, a significant majority of rural *posyandu* offer several additional services, whereas *posyandu* in urban areas seem more focused on weighing infants and providing immunizations, vitamin A, and supplementary food. Moreover, when we considered the availability of health instruments in *posyandu* (table 10), we found that rural *posyandu* are more likely to possess a wider variety of medical instruments.

Several reasons can be offered to explain these gaps between rural and urban *posyandu*: either demand for *posyandu* is much higher in rural than urban areas due to worse health conditions and higher birth rates, or it is purely a supply-side aspect, that is, national, district, and subdistrict health policy has strengthened urban *puskesmas* at the expense of urban *posyandu*.¹⁰

Table 10: Availability of Health Instruments at the Posyandu by Urban and Rural Areas

	Urban	Rural
<i>Posyandu</i> (number)	38	56
Health instruments (percent)		
Baby scales	89.47	96.43
Height measuring devices	47.37	55.36
Oral contraceptive pills	10.53	19.64
Oralit	18.42	25.00
Iron tablets	5.26	19.64
Vitamin A	15.79	26.79
Paracetamol	5.26	21.43
Adult scale	63.16	60.71
Stethoscope	2.63	17.86
Thermometer	2.63	12.50

Source: Authors' calculations based on IFLS East 2012.

Although our main analysis rests on comparisons between rural and urban areas, it is important to highlight that a lot of variation in the availability and quality of *posyandu* exists within rural and urban areas (table 11). A large share of *posyandu* in rural areas ranked low in terms of their capacity¹¹ (42.86 percent), while a relatively large share of *posyandu* ranked high (32.14 percent). Compared with urban areas, quality varies a great deal among rural *posyandu*.

¹⁰ The gap between urban and rural areas shrinks when considering several types of family planning services but it is worth noting in this case that, on average, less than half of the *posyandu* provide this type of service (table 9 Panel B). To what extent the provision of health services is driven by particular government programmes such as BOK or Jamkesmas is an important and interesting question. Unfortunately, the data doesn't allow for such a more disaggregated analysis.

¹¹ For some areas, the MoH established only 'lower-level capacity' *puskesmas*, which means they will receive less funding, equipment, and staff for everything. However, they are also not expected to provide certain types of services.

Table 11: Level of Capacity in Posyandu by Urban and Rural Areas

	Urban	Rural
<i>Posyandu</i> (number)	21	28
Level of capacity (percent)		
Lower	28.57	42.86
Middle	28.57	17.86
Higher	28.57	7.14
Self-sufficient	14.29	32.14

Source: Authors' calculations based on IFLS East 2012.

Note: In this table, capacity is defined as providing the kind of services that the Ministry of Health considers puskesmas should provide.

When analysing the educational levels of the heads and cadres¹² of the *posyandu* (table 12), we observed that, on average in both areas, many had obtained a senior high school degree. In line with results already presented above, we found that among rural *posyandu*, a large share of staff have low education levels and a relatively small percentage of graduates from university, compared with urban *posyandu*.

Table 12: Educational Level of Posyandu Heads and Cadres by Urban and Rural Areas

	Urban		Rural	
	Head	Cadre	Head	Cadre
Heads and cadres interviewed (number)	25	19	28	33
Educational level (percent)				
No formal education	4.00	0.00	3.57	3.03
Incomplete elementary	0.00	0.00	0.00	3.03
Complete elementary	8.00	10.53	32.14	24.24
Incomplete junior high school	4.00	5.26	10.71	21.21
Complete junior high school	8.00	21.05	10.71	9.09
Incomplete senior high school	0.00	0.00	7.14	0.00
Complete senior high school	64.00	57.89	28.57	39.39
Complete college	4.00	0.00	0.00	0.00
Incomplete university	0.00	0.00	3.57	0.00
Complete university	8.00	5.26	3.57	0.00

Source: Authors' calculations based on IFLS East 2012.

The last point worth analysing relates to the difficulties that *posyandu* face in their routine administration activities and, more specifically, when addressing maternal and child care. Table 13 offers an overview of several aspects that the interviewed heads and cadres considered problematic in their *posyandu*.

¹² 'Cadre' is a special term from Bahasa that refers to a certain type of staff.

In general, *posyandu* located in rural areas face more problems than those in urban areas (table 13). The gap between the two areas seems large in relation to lack of funds, medical supplies, and equipment, both in general terms (i.e., administration routines) and the supply of maternal and child care services. However, relatively fewer *posyandu* in rural compared with urban areas face a lack of interest/participation by the community or are provided only a temporary (non-permanent) place. This finding, once again, may support the aforementioned argument of a possible larger demand for *posyandu* services in rural areas.

Table 13: Main Problems Faced by Posyandu

	Urban	Rural
<i>Posyandu</i> (number)	38	59
General problems (percent)		
Lack of funds	44.74	59.32
Lack of medical supply	10.52	28.81
Lack of equipment	34.21	47.46
Lack of active cadres	18.42	18.64
Lack of support from <i>puskesmas</i>	7.89	8.47
Lack of support from village	2.63	11.86
No permanent place	18.42	16.95
Lack of interest/participation	26.32	11.86
No problem	21.05	6.78
Problems in maternal and child health		
Lack of funds	18.42	40.68
Lack of medical supply	5.26	18.64
Lack of equipment	18.42	28.81
Lack of support from <i>puskesmas</i>	5.26	8.47
Lack of support from village	5.26	5.08
No permanent place	15.79	11.86
Lack of interest/participation	18.42	15.25
Lack of training for the cadres	5.26	28.81
No problem	36.84	20.34

Source: Authors' calculations based on IFLS East 2012.

Traditional Midwives

Another provider of maternal and child health-care services are traditional midwives (dukun). Table 14 shows that a significant majority of dukun in both urban and rural areas provide postnatal care for mothers and children in addition to delivery services. Only minor differences exist between urban and rural areas for most of the data in table 14, except for the level of fees, which is remarkably higher in urban areas.

Although traditional midwives might be more expensive in urban compared with rural areas, they also seem to provide somewhat better services in urban areas (on average, spending slightly more time with mothers and children) and possess better qualifications (measured in terms of the training which they receive).¹³

Table 14: Traditional Midwives: Services Offered by Urban-Rural Areas

		Urban	Rural
Traditional midwives (number)		20	55
Services offered			
Delivery	Charge for delivery (percent)	30	20
	Fee for delivery (rupiahs)	206,250	118,333.3
Postnatal care for mothers	Provide postnatal care for mothers (percent)	90	87.27
	Charge for mother care after delivery (percent)	16.67	6.25
	Fee for mother care after delivery (rupiahs)	121,426.6	7,894.737
	Days providing mother care (average number)	14.17	12.17
Postnatal care for babies	Provide postnatal care for babies (percent)	90	85.45
	Charge for services (percent)	5.56	4.26
	Fee for baby care after delivery (rupiahs)	121,428.6	7,894.737
	Days providing baby care (average number)	16.11	12.96

Source: Authors' calculations based on IFLS East 2012.

¹³ As suggested by the figures reported in table A2 in the appendix, employees in *puskesmas* in urban areas are more likely to engage in medical training, whereas in rural areas, almost one-third of traditional midwives receive training only from formally trained midwives.

4. Do Poorer Areas Have Lower Levels of Health-Care Provision?

Areas with a relatively large number of poor persons are less likely to obtain quality health-care services. As rural areas are on average poorer than urban areas, our analyses above have already provided evidence for this statement.

To further verify this conclusion, we re-analysed all tables by classifying all communities covered in the IFLS East 2012 into three distinct wealth categories based on average real per-capita expenditures of each community.

Table 15 shows the respective descriptive statistics. In line with our expectations, among the poorest communities (designated as a ‘low’ expenditure group in the table), the average education level is relatively low. Although little difference exists in terms of availability of electricity, richer communities have greater amounts of electrical power (in watts) than poorer communities. Furthermore, poorer communities tend to face more infrastructure problems; the quality of their roads is not good, and they are more distant from the district capital and the closest market.

When one looks at the provision of health care given in *puskesmas* (appendix table B1), the pattern across the three wealth categories is analogous to the one that emerged in the urban-rural comparison in section III above: poorer communities tend to have fewer practitioners than richer communities, but their medical professionals on average perform a larger set of different health services.

Poor communities also lag behind in the qualitative indicators of health facilities, as on average, the practitioners who are employed there tend to have fewer years of experience (appendix table B2), the facilities themselves function under a worse physical infrastructure (appendix table B5), and have less equipment available (appendix table B6). Furthermore, absenteeism appears to be significantly higher among the poorest communities (appendix table B3), whereas in the richest communities, the absenteeism rate is just above 9 percent; this rate rises to 27 percent for *puskesmas* employees in the poorest communities.

The *posyandu* supply of maternal and child health-care services appears in many aspects to be relatively larger among poorer communities, especially in terms of immunization services, pregnancy examination, provision of iron tablets, treatment of patients, and condom delivery (appendix table B7). However, *posyandu* located in the poorer communities tend to face relatively more problems with funds, medical supplies, and equipment, the latter of which in most cases appears to be insufficient for their daily needs (appendix table B11).

Table 15: Community Characteristics by Community Wealth Levels

Community characteristics	Expenditure Groups		
	Low	Middle	High
Mean expenditure (value in rupiahs)	679,597.3	1,065,333	1,676,764
Value of asset index	-0.37	0.1	0.65
Years of schooling of the household head (average number)	6.56	7.45	8.92
Years of schooling of the respondent's spouse (average number)	5.69	6.81	8.42
Communities in the urban areas (number)	3	13	22
Communities in the rural areas (number)	30	19	11
Communities with electricity (number)	33	31	31
Communities in which electricity has become much more available (number)	16	19	19
Communities with 1,450 watts of electricity available (number)	18	12	7
Communities with 2,900 watts of electricity available (number)	2	11	19
Communities with asphalt or cement roads (number)	23	21	28
Communities with dirt roads (number)	5	6	2
Average distance to the district capital (km)	83.51	57.17	12.77
Average distance to the closest market (km)	35.77	37.56	7.65
Communities with at least one village midwife (number)	21	20	16
Communities in which there has ever been a midwife (number)	3	9	4
Communities with <i>puskesmas</i> (number)	33	31	33
Communities with <i>posyandu</i> (number)	31	31	33
Communities with traditional midwives (number)	31	24	21

Source: Authors' calculations based on IFLS East 2012.

Note: Expenditure groups are based on expenditure tercile classification derived from real expenditure per capita data in each village.

There is also a significant share (50 percent) of the *posyandu* in the poorest communities that are ranked very low in terms of their capacity, whereas more than 60 percent of the *posyandu* located in the middle wealth group of communities reach the highest two levels. At the same time, in the richest communities, nearly 69 percent of the *posyandu* are classified as having low or middle quality (appendix table B10). The interpretation of this last finding is not straightforward, although it is possible that the large share of low-ranked *posyandu* in the wealthier communities reflects the lower demand for their services (appendix table B7).

5. Financial Resources of the Puskesmas

The IFLS East 2012 collected information on the funding sources for each of the sampled *puskesmas*. As shown in table 16, both urban and rural *puskesmas* rely to a large extent on funds from the Health Operational Assistance (Bantuan Operasional Kesehatan or BOK) programme; a somewhat larger share of urban *puskesmas* receive BOK, usually of higher value (in rupiahs) than rural *puskesmas*. In general, urban *puskesmas* receive more funds than rural *puskesmas* approved by the Dinas Kesehatan. In addition to receiving district funds, national funds play a major role in financing *puskesmas* activities. Assistance from the central government and payments received from Jamkesmas account for about 40 percent of the budget of urban *puskesmas* and nearly 80 percent of the budget of rural *puskesmas*.

Table 16: Financial Resources of Puskesmas by Urban-Rural Areas

	Urban	Rural
<i>Puskesmas/pustu</i> that have received BOK funds (percent)	97.37	81.35
Budget derived from BOK for the past year's budget (rupiahs)	180,000,000	112,000,000
Budget derived from BOK for the current year's budget (rupiahs)	183,000,000	132,000,000
<i>Puskesmas/pustu</i> that recently finished budget year 2011 (percent)	97.37	89.83
<i>Puskesmas/pustu</i> that recently finished budget year 2011–12 (percent)	2.63	10.17
<i>Puskesmas</i> that did not send budget proposal to local government (Dinas Kesehatan) for the past budget year (percent)	68.42	67.80
<i>Puskesmas</i> that sent specific budget proposal to local government (Dinas Kesehatan) for the past budget year (percent)	31.58	32.20
Budget proposed by <i>puskesmas</i> to local government (Dinas Kesehatan) for the past budget year (rupiahs)	445,000,000	206,000,000
Budget of the <i>puskesmas</i> for the last budget year (rupiahs)	410,000,000	232,000,000
Percentage of the budget comprising:		
Assistance from regional government	44.39	22.28
Assistance from central government	21.05	43.97
Claim from Jamkesmas/Jamkesda	19.68	35.47
Patients	4.85	1.89
Askes	7.32	3.05
Other assistance	0.31	0.17
<i>Puskesmas</i> that did not receive any revenue/patient target from Dinas Kesehatan for past budget year (percent)	80.56	71.79
<i>Puskesmas</i> that received both a revenue and a patient target from Dinas Kesehatan for past budget year (percent)	19.44	28.21
Target of revenue from patients set by local government (Dinas Kesehatan) (rupiahs)	23,100,000	15,100,000

Source: Authors' calculations based on IFLS East 2012.

Note: Information was provided by head of the *puskesmas*.

5. Conclusion

Despite improvements in the supply of health care in Indonesia in the past several decades, the demand for quality health care has not yet been sufficiently met. Furthermore, the supply of health care has not occurred at the same speed across the country; health-care access for the poor and for people residing in rural areas is substantially lower compared with richer and urban areas. The undersupply of health-care services has contributed to Indonesia's mixed performance on a variety of health outcomes, while the cost of health care in Indonesia is rather high compared with other Asian countries.

This paper examines the availability and quality of public health facilities in Eastern Indonesia, a region that is well known to lag behind the rest of Indonesia in terms of high poverty rates, low levels of infrastructure, and often worse health outcomes. Despite health provision being highly important to Eastern Indonesia, little is known and documented about it in this region. Drawing on a new data set—the IFLS East 2012—this paper contributes to and generates knowledge about the public health-care system in Eastern Indonesia.

Our findings suggest that public health-care provision plays a much larger role in Eastern Indonesia than in other parts of the country. However, despite its crucial role in Eastern Indonesia, public health-care provision suffers from a variety of shortcomings. Focusing on *puskesmas* and *posyandu*, our analysis reveals that many health facilities face significant constraints in terms of the availability (understaffing and absenteeism) and quality (education degrees and medical training) of medical doctors and medical staff. The results suggest that many public health facilities work under poor physical infrastructure and a limited supply of medical equipment and medication.

Furthermore, our findings reveal strong differences between urban and rural public health-care provision. Regarding *puskesmas*, we found that rural *puskesmas* are more likely to operate with a small number of medical staff, show higher absenteeism rates, and face more limitations in terms of infrastructure, medical equipment, and medication. With rural *puskesmas* on average receiving significantly less funding than urban *puskesmas*, the results can be partly attributed to the financial allocation for rural *puskesmas*. Rural *puskesmas*, in addition, seem to employ a comparatively larger share of medical staff that works on an honorarium basis, a fact that points to further differences between rural and urban *puskesmas*. Although urban *puskesmas* seem better endowed than rural *puskesmas*, we did not find that the same results hold for the *posyandu*. On the contrary, we observed that rural *posyandu* are better supplied with medical equipment and medications than urban *posyandu*, which might imply that national and district health policies are setting very different priorities on which type of public health facility and which health services should be provided to urban and rural populations. In line with the urban-rural comparison, we observed similar differences among village wealth levels; poor villages show relatively worse health service provision in *puskesmas* and relatively better service provision in *posyandu*.

As a last step, we analysed funding for *puskesmas*. The data show that both urban and rural *puskesmas* rely heavily on BOK programme, district, and provincial government funds. Likewise, a substantial amount of *Puskesmas* financing is received from Jamkesmas. Although public funds received from the national government play a dominant role, they are particularly important for the functioning of rural *puskesmas*, which receive about 80 percent of their finances from national allocations (including Jamkesmas).

Overall, the results suggest significant scope for further improving public health-care services in Eastern Indonesia. Given the strong reliance of people in Eastern Indonesia on access to public health-care facilities (in contrast to Western Indonesia, where people rely relatively more on health services of private providers), it seems necessary for the Government of Indonesia to pay particular attention to the problems of public health-care provision in Eastern Indonesia.

References

Bappenas. 2009. *Pembangunan Kesehatan dan Gizi di Indonesia: Overview dan Arah ke Depan: Background Study RPJMN 2010–2014 (Health and Nutritional Development in Indonesia: An Overview and Future Directions: Background Study RPJMN 2010–2014)*. Jakarta, Indonesia.

Barber, S. L., P. J. Gertler, and P. Harimurti. 2007. ‘Differences in Access to High-Quality Outpatient Care in Indonesia.’ *Health Affairs* 26 (3): 352–66.

Barrera, A. 1990. ‘The Role of Maternal Schooling and Its Interaction with Public Health Programs in Child Health Production Function.’ *Journal of Development Economics* 32(1): 69–91.

BPS (Statistics Indonesia). 2008. *Indonesia Demographic and Health Survey 2007: Preliminary Report*. Jakarta, Indonesia: Statistics Indonesia, National Population and Family Planning Board, Ministry of Health, and Macro International.

Frankenberg, E., and D. Thomas. 2001. ‘Women’s Health and Pregnancy Outcomes: Do Services Make a Difference?’ *Demography* 38(2): 253–65.

Glewwe, P. 1999. ‘Why Does Mother’s Schooling Raise Child Health in Developing Countries? Evidence from Morocco.’ *Journal of Human Resources* 34(1): 124–59.

Kristiansen, S., and P. Santoso. 2006. ‘Surviving Decentralization? Impacts of Regional Autonomy on Health Service Provision in Indonesia’. *Health Policy* 77(3): 247–59.

MoH (Ministry of Health). 1994. *Pedoman Pembinaan Teknis Bidan Di Desa*. Directorate General of Community Health. Jakarta, Indonesia.

MoH (Ministry of Health). 2014. *Riset Kesehatan Dasar: Riskesdas 2013*. Jakarta, Indonesia.

Mosley, W. H., and L. Chen. 1984. ‘An Analytical Framework for the Study of Child Survival in Developing Countries. Child Survival: Strategies for Research.’ *Population and Development Review* 10 (Supplement): 25–48.

Pradhan, M., F. Saadah, and R. Sparrow. 2007. ‘Did the Health Card Programme Ensure Access to Medical Care for the Poor during Indonesia’s Economic Crisis?’ *World Bank Economic Review* 21(1): 125–50.

Priebe, J., F. Howell, and P. Pankowska. 2014. ‘Determinants of Access to Social Assistance Programmes in Eastern Indonesia: Empirical Evidence from the IFLS East 2012’. TNP2K Working Paper 11b-2014. Jakarta, Indonesia: Tim Nasional Percepatan Penanggulangan Kemiskinan (TNP2K).

Roemling, C., and M. Qaim. 2012. ‘Obesity Trends and Determinants in Indonesia.’ *Appetite* 58(3): 1005–13.

Roemling, C., and M. Qaim. 2013. ‘Dual Burden Households and Intra-Household Nutritional Inequality in Indonesia.’ *Economics and Human Biology* 11(4): 563–73.

Rokx, C., J. Giles, E. Satriawan, P. Marzoeki, P. Harimurti, and E. Yavuz. 2010. *New Insights into the Provision of Health Services in Indonesia: A Health Workforce Study*. Directions in Development: Human Development, number 53883. Washington, DC: World Bank.

Satriawan, E., J. Priebe, R. A. Prima, and F. Howell. 2014. ‘An Introduction to the Indonesia Family Life Survey (IFLS) East 2012: Sampling, Questionnaires, Maps, and Socioeconomic Background’. TNP2K Working Paper 11a-2014. Jakarta, Indonesia: Tim Nasional Percepatan Penanggulangan Kemiskinan (TNP2K).

Sparrow, R., A. Suryahadi, and W. Widjanti. 2010. ‘Social Health Insurance for the Poor: Targeting and Impact of Indonesia’s Askeskin Program.’ Working Paper (May). Jakarta, Indonesia: SMERU Research Institute.

Strauss, J. 1990. ‘Households, Communities, and Preschool Children’s Nutrition Outcomes: Evidence from Rural Côte d’Ivoire.’ *Economic Development and Cultural Change* 38(2): 231–61.

WHO (World Health Organization). 2013. ‘Appendix 10 - Indonesia case study.’ In: Mid-level health workers for delivery of essential health services: a global systematic review and country experiences. Geneva: World Health Organization.

World Bank. 2013. ‘Adjusting to Pressures’. *Indonesia Economic Quarterly* (July). Jakarta, Indonesia.

Yavuz, E., and C. Rokx. 2008. *Investing in Indonesia’s Health: Challenges and Opportunities for Future Public Spending*. Health Public Expenditure Review 2008. Washington, DC: World Bank.

Appendices

Appendix A

Table A1 Absenteeism in the Puskesmas by Urban-Rural Areas

Reasons for being absent (%)	Urban	Rural
1. Off duty	12.22	1.71
2. Vacation	1.11	0.57
3. No longer work there	28.89	36.57
4. Sick	7.78	5.14
5. Family member is sick	3.33	2.86
6. Other authorised absence	41.11	26.29
7. Late	2.22	20.57
8. Unauthorised absence	3.33	5.71

Source: Authors' calculations based on IFLS East 2012.

Table A2 Training of the Traditional Midwives by Urban-Rural Areas

	Urban	Rural
Traditional midwives who had ever received training (percent)	65.00	52.73
Who organised the training		
Midwives (bidan)	7.69	27.59
Midwives and <i>puskesmas</i>	15.38	6.90
<i>Puskesmas</i>	53.85	37.93
<i>Puskesmas</i> and <i>posyandu</i>	0.00	3.45
Other	23.08	24.14

Source: Authors' calculations based on IFLS East 2012.

Appendix B

Table B1 Care Provision in Puskesmas by Type of Practitioner and by Community Wealth Levels

Expenditure terciles:	Practitioners (number)	Experience (average number of years)	Provide Pre-Natal Care (percent)			Provide Curative Care for Children (percent)			Provide Curative Care for Adults (percent)			Provide Care for Elderly (percent)						
			Low	Mid	High	Low	Mid	High	Low	Mid	High	Low	Mid	High				
General practitioners	30	41	84	1.41	2.43	4.43	60.00	26.83	48.81	100.00	95.12	85.71	100.00	95.12	94.05	96.67	92.67	85.71
Dentists	12	25	26	1.15	3.31	6.26	0.00	0.00	75.00	92.00	84.62	75.00	92.00	88.46	75.00	92.00	92.00	76.92
Nurses	189	260	475	6.00	6.22	7.44	20.11	16.54	12.84	96.83	86.15	74.32	96.83	89.23	91.37	91.53	73.85	80.42
Midwives	118	129	195	5.90	5.55	7.69	94.92	96.12	90.26	55.08	63.57	79.49	70.34	55.81	52.31	72.03	38.76	37.44
Village midwives	25	62	55	3.25	4.13	8.56	100.00	100.00	84.00	93.55	90.91	84.00	91.94	49.09	84.00	64.52	34.55	
Paramedics	25	8	48	8.65	3.83	7.59	40.00	12.50	6.25	68.00	62.50	56.00	75.00	43.75	60.00	62.50	35.42	
Specialists	0	0	2	2.00	0.00	0.00	50.00	0.00	0.00	50.00	0.00	0.00	100.00	0.00	0.00	100.00		

Source: Authors' calculations based on IFLS East 2012.

Note: Numbers may not add up due to rounding errors.

Table B2 Practitioners' Characteristics and Working Hours in Puskesmas by Community Wealth Levels

Expenditure terciles:	Practitioners (number)			Hours/Week Worked (average number)			Hours/Week Service Provided (average number)			Practitioners Absent (percent)		
	Low	Middle	High	Low	Middle	High	Low	Middle	High	Low	Middle	High
General practitioners	30	41	84	29.74	30.73	33.47	22.03	23.74	23.94	43.33	31.71	9.52
Dentists	12	25	26	32.10	31.00	31.89	19.60	23.56	21.08	8.33	28.00	3.85
Nurses	189	260	475	31.21	29.69	35.31	21.62	22.45	24.18	23.81	14.62	10.53
Midwives	118	129	195	29.46	30.95	34.72	19.54	24.25	24.34	15.25	17.83	5.13
Village midwives	25	62	55	27.86	28.78	32.96	19.71	21.42	25.66	56.00	17.74	5.45
Paramedics	25	8	48	31.83	34.25	32.07	21.72	20.25	24.00	20.00	25.00	6.25
Specialists	0	0	2		36.00				15.36	0.00	0.00	0.00

Source: Authors' calculations based on IFLS East 2012.

Table B3 Absenteeism in Puskesmas by Community Wealth Levels

	Expenditure Terciles		
	Low	Middle	High
Absent (percent)	26.97	19.11	9.32
Absent (number)	96	94	75
Total employees (number)	356	492	805
Reasons for being absent (percent)			
1. Off duty	1.04	0.00	17.33
2. Vacation	1.04	1.06	0.00
3. No longer work there	19.79	56.38	24.00
4. Sick	5.21	4.26	9.33
5. Family member is sick	3.13	4.26	1.33
6. Other authorised absence	30.21	24.47	41.33
7. Late	33.33	3.19	4.00
8. Unauthorised absence	5.21	6.38	2.67

Source: Authors' calculations based on IFLS East 2012.

Table B4 Average Numbers of Government and Honoraria Employees in Puskesmas by Working Time and by Community Wealth Levels

	Practitioners	Expenditure Terciles											
		Low				Middle				High			
		Government Employees		Honoraria Employees		Government Employees		Honoraria Employees		Government Employees		Honoraria Employees	
		Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time
General practitioners	0.52	0.03				0.97	0.00			4.64	0.03		
Dentists	0.21	0.00				0.55	0.10			0.76	0.03		
Nurses	5.03	0.00	1.50	0.00	6.58	0.19	2.04	0.04	12.67	0.00	2.35	0.00	
Midwives	2.36	0.03	1.20	0.00	3.48	0.03	0.69	0.00	5.15	0.00	1.10	0.00	
Village midwives (bidan desa)	0.94	0.00	0.90	0.00	0.65	0.19	2.42	0.00	1.33	0.00	0.48	0.00	
Paramedics	2.12	0.00	1.50	0.00	1.77	0.00	0.69	0.00	4.36	0.00	0.61	0.00	
Obstetricians/gynaecologist	0.00	0.00			0.00	0.00			0.00	0.00			
Specialists on elderly	0.00	0.00			0.00	0.00			0.00	0.00			
Public health workers	0.52	0.00			0.87	0.00			2.30	0.00			
Paediatricians	0.00	0.00			0.00	0.00			0.00	0.00			
Assistant nutrition experts	0.36	0.00			0.29	0.00			0.91	0.00			
Health workers	0.36	0.00			0.52	0.03			1.52	0.00			
Administrative employees	0.55	0.00	1.20	0.00	1.29	0.03	1.00	0.04	2.18	0.00	0.90	0.00	
Other staff	0.18	0.00	0.10	0.00	0.61	0.00	0.12	0.00	1.09	1.21	0.13	0.00	

Source: Authors' calculations based on IFLS East 2012.

Table B5 Room Conditions in Puskesmas by Community Wealth Levels

		Expenditure Terciles		
		Low	Middle	High
<i>Puskesmas</i> (number)		33	31	33
Registration/waiting room (percent)	Patient registration cards	57.58	83.87	93.94
	Registration books	90.91	96.77	93.94
	Drawer to store files	72.73	93.55	93.94
	Dirty floor	12.12	3.23	0.00
	Dirty walls	18.18	6.45	9.09
	Dirty ceiling	21.21	6.45	6.06
	Experiencing leaks/splashes/flooding during the rainy season	66.67	80.65	81.82
Examination room (percent)	Dirty floor	18.18	6.45	6.06
	Dirty walls	21.21	6.45	3.03
	Dirty ceiling	24.24	6.45	12.12

Source: Authors' calculations based on IFLS East 2012.

Table B6 Availability and Condition of Health Instruments in Puskesmas by Community Wealth Levels

Instruments	Expenditure Terciles					
	Low		Middle		High	
	Average number	In good repair (%)	Average number	In good repair (%)	Average number	In good repair (%)
Stethoscope	3.21	72.64	4.77	79.05	5.36	76.27
Thermometer	2.79	90.22	2.19	88.24	3.58	90.68
Beds	2.58	96.47	3.06	100.00	3.27	98.15
Inpatient beds	1.52	68.00	1.71	96.23	3.70	90.16
Delivery kits	1.45	89.58	1.35	90.48	2.15	84.51
Ultrasounds	1.45	100.00	2.52	98.72	2.12	100.00
Electrocardiograms	0.09	100.00	0.13	50.00	0.42	50.00
Syringes	1.79	89.83	2.45	85.53	4.27	92.91

Source: Authors' calculations based on IFLS East 2012.

Table B7 Services Offered in Posyandu by Community Wealth Levels

	Expenditure Terciles		
	Low	Middle	High
Posyandu (number)	31	31	33
Services offered (percent)			
Weighing of babies/children	100.00	100.00	100.00
Provision of supplementary food	77.42	80.65	81.82
Provision of Oralit	54.84	48.39	54.55
Immunization service	96.77	90.32	87.88
Pregnancy examination	67.74	64.52	60.61
Provision of iron vitamin	74.19	54.84	63.64
Provision of vitamin A	96.77	100.00	100.00
Treatment of patients	48.39	35.48	30.30
Child development	25.81	38.71	39.39
Mother and child health	54.84	58.06	42.42
Family planning services (percent)			
Oral Contraceptive	17.74	24.19	25.76
Condom (per unit)	16.13	8.06	4.55
Injectable contraceptive	22.58	24.19	24.24
Counselling and help with treating pregnancy-related side effects	11.29	16.13	10.61
Family planning counselling	27.42	27.42	24.24

Source: Authors' calculations based on IFLS East 2012.

Table B8 Availability and Condition of Instruments at the Posyandu by Community Wealth Levels

	Expenditure Terciles		
	Low	Middle	High
Posyandu (number)	31	31	33
Health instruments (percent)			
Baby scales	100.00	93.55	87.88
Height measuring devices	54.84	45.16	57.58
Oral contraceptive pills	12.90	22.58	12.12
Oralit	22.58	22.58	24.24
Iron tablets	19.35	9.68	12.12
Vitamin A	22.58	22.58	21.21
Paracetamol	12.90	19.35	12.12
Adult scale	51.61	61.29	69.70
Stethoscope	19.35	12.90	3.03
Thermometer	12.90	6.45	6.06

Source: Authors' calculations based on IFLS East 2012.

Table B9 Educational Level of Posyandu Heads and Cadres by Community Wealth Levels

	Expenditure Terciles					
	Low		Middle		High	
	Head	Cadre	Head	Cadre	Head	Cadre
Heads and cadres interviewed (number)	16	19	20	12	18	21
Level of education (percent)						
No formal education	6.25	0.00	0.00	8.33	5.56	0.00
Incomplete elementary	0.00	0.00	0.00	8.33	0.00	0.00
Complete elementary	25.00	26.32	35.00	8.33	5.56	19.05
Incomplete junior high school	12.50	15.79	10.00	8.33	0.00	19.05
Complete junior high school	6.25	10.53	15.00	25.00	5.56	9.52
Incomplete senior high school	12.50	0.00	0.00	0.00	0.00	0.00
Complete senior high school	31.25	47.37	30.00	41.67	72.22	47.62
Complete college	0.00	0.00	0.00	0.00	5.56	0.00
Incomplete university	0.00	0.00	0.00	0.00	5.56	0.00
Complete university	6.25	0.00	10.00	0.00	0.00	4.76

Source: Authors' calculations based on IFLS East 2012.

Table B10 Classification of Posyandu by Community Wealth Levels

	Expenditure Terciles		
	Low	Middle	High
Posyandu (number)	18	16	16
Level of capacity (percent)			
Lower-level capacity	50.00	25.00	31.25
Middle-level capacity	16.67	12.50	37.50
Higher-level capacity	5.56	25.00	18.75
Sufficient-level capacity	27.78	37.50	12.50

Source: Authors' calculations based on IFLS East 2012.

Table B11 Problems Faced by Posyandu by Community Wealth Levels

	Expenditure Terciles		
	Low	Middle	High
Posyandu (number)	33	33	33
General problems (percent)			
Lack of funds	60.61	51.52	45.45
Lack of equipment	48.48	39.39	36.36
Lack of active cadres	24.24	9.09	21.21
Lack of support from <i>puskesmas</i>	9.09	6.06	9.09
Lack of support from village	9.09	12.12	3.03
No permanent place	15.15	27.27	9.09
Lack of interest/participation	12.12	9.09	30.30
No problem	3.03	21.21	15.15
Problems in maternal and child health (percent)			
Lack of funds	54.55	21.21	18.18
Lack of medical supplies	21.21	12.12	6.06
Lack of equipment	33.33	18.18	21.21
Lack of support from <i>puskesmas</i>	15.15	3.03	3.03
Lack of support from village	6.06	6.06	3.03
No permanent place	9.09	15.15	15.15
Lack of interest/participation	18.18	12.12	18.18
Lack of training for the cadres	33.33	9.09	15.15
No problem	9.09	33.33	39.39

Source: Authors' calculations based on IFLS East 2012.

Table B12 Traditional Midwives: Service Offered and Training Received by Community Wealth Levels

		Expenditure Terciles		
		Low	Middle	High
Traditional midwives (number)		31	24	21
Services offered				
Delivery	Charge for delivery (percent)	25.81	16.67	23.81
	Fee for delivery (rupiahs)	90,769.2	175,000.0	221,428.6
Postnatal care for mothers	Provide postnatal care for mothers (percent)	83.87	91.67	90.48
	Charge for mother care after delivery (percent)	7.69	4.55	15.79
	Fee for mother care after delivery (rupiahs)	11,538.5	22,222.2	130,000.0
	Days providing mother care (average number)	14.8	9.0	14
Postnatal care for babies	Provide postnatal care for babies (percent)	80.65	87.50	95.24
	Charge for postnatal care for babies (percent)	4	0	10
	Fee for babies care after delivery (rupiahs)	0	0	6,250
	Days providing baby care (average number)	16.8	7.8	16.4
Training of midwives				
	Midwives who ever received training (percent)	41.94	66.67	61.90
Who organised the training	Midwives (bidan)	30.77	25.00	7.69
	Midwives and <i>puskesmas</i>	0.00	12.50	15.38
	Puskesmas	38.46	43.75	46.15
	<i>Puskesmas and posyandu</i>	0.00	6.25	0.00
	Other	30.77	12.50	30.77

Source: Authors' calculations based on IFLS East 2012.

Little is known about public health-care supply in Eastern Indonesia, a region that shows worse health outcomes than the rest of the country. Drawing on a new dataset (IFLS East 2012), this paper examines the availability and quality of public health-care facilities (*puskesmas* and *posyandu*) in Eastern Indonesia.

Our findings suggest that public health-care supply plays a larger and more important role in Eastern Indonesia compared with Western Indonesia. However, this stronger reliance and dependence on public health-care provision has not necessarily resulted in quality health-care supply. Although significant improvements have been achieved over time, we found that many *puskesmas* and *posyandu* could benefit from more and better-trained staff (education, training, availability, absenteeism) and better physical endowment (infrastructure, medical equipment, and medications). The results further suggest that remarkable differences in the provision of health care exist between urban and rural areas; urban areas have on average better-equipped *puskesmas*, whereas rural areas seem to have better-equipped *posyandu*. Furthermore, we found that direct funds from the central level (central government funds and Jamkesmas), despite the decentralization process, play a major role in financing the operations of public health facilities. In rural Eastern Indonesia, these central-level funds constitute about 80 percent of the total operational budget of a *puskesmas*.

**TIM NASIONAL PERCEPATAN PENANGGULANGAN KEMISKINAN
(TNP2K)**

Jl. Kebon Sirih No. 35, Jakarta Pusat 10110
Tel: +62 (0) 21 391 2812
Fax: +62 (0) 21 391 2511
E-mail: info@tnp2k.go.id
Web: www.tnp2k.go.id



Printed on recycled paper

